

Cheetah Omni's Claim Construction

September 3, 2009

Overview

Defendants Ask The Court To Ignore The Claims and Prosecution History

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’”

“The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims.”

Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (citations omitted).

The Prosecution History May Not Be Ignored

“[T]he prosecution history provides evidence of how the PTO and the inventor understood the patent.”

Phillips, 415 F.3d at 1317.

“This ‘undisputed public record’ of proceedings in the Patent and Trademark Office is of primary significance in understanding the claims.”

Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370 (1996).

Dr. Islam Believed His Claims Covered Projection Systems

- During prosecution of his '714 patent, Dr. Islam cited prior art projection system references.
 - 6,317,171 (Texas Instruments)
 - "Rear-Screen Projection Television With Spatial Light Modulator"
 - 6,457,830 (Samsung Electronics Co. Ltd.)
 - "Reflection-Type Projector"
 - 6,508,556 (Mitsubishi D.K.K.)
 - "Projection Display Apparatus"

The PTO Believed The Claims Covered Projection Systems

- The PTO cited and applied prior art projection systems during prosecution of the '714 patent:
 - U.S. Patent Publication No. 2005/0063196 ("Li") – a cinema projector
 - U.S. Patent No. 6,877,859 ("Silverstein") – a "digital projection apparatus."
 - U.S. Patent No. 6,587,159 ("TI patent") – a digital projector.

(19) Uni **Li**
 (12) Pat **Li** **ation Publication** (10) Pub. No.: US 2005/0063196 A1
 (43) Pub. Date: Mar. 24, 2005

(54) **LIGHT PIPE BASED PROJECTION ENGINE** No. 60/489,104, filed on Jul. 23, 2003. Provisional application No. 60/527,006, filed on Dec. 5, 2003.
 (75) Inventor: Kenneth K. Li, Arcadia, CA (US)

LIGHT PIPE BASED PROJECTION ENGINE

WASHINGTON, DC 20005 (US)

(73) Assignee: Wavien, Inc., Santa Clarita (US)

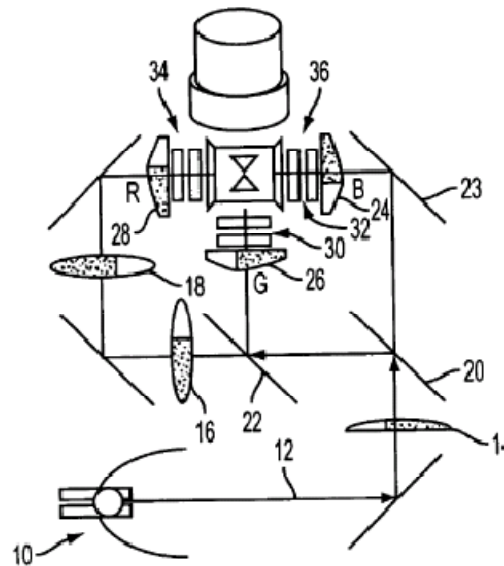
(21) Appl. No.: 10/863,588

(22) Filed: Jun. 9, 2004

Related U.S. Application Data

(60) Provisional application No. 60/476,612, filed on Jun. 9, 2003. Provisional application No. 60/479,730, filed on Jun. 20, 2003. Provisional application No. 60/485,736, filed on Jul. 10, 2003. Provisional application

A light pipe based projection engine includes a X-prism transmitting substantially light of a useful polarization in an output direction and reflecting substantially light of a non-useful polarization in a first orthogonal direction substantially orthogonal to the output direction. An initial reflector may reflect the non-said low, said medium, and said high bands of wavelengths in a second orthogonal direction substantially orthogonal to the output direction and the first orthogonal direction, and a final reflector may reflect the non-said low, said medium, and said high bands of wavelengths in the output direction. The non-said low, said medium, and said high bands of wavelengths may be rotated substantially to light of the useful polarization by the initial and final reflectors.



Silverstein et al.

6,877,859 B2

(12) **US**
Silverstein et al.(43) **Date of Patent:** **Apr. 12, 2005**(54) **PROJECTION APPARATUS USING
TELECENTRIC OPTICS**

5,132,826 A	7/1992	Johnson et al.	349/18
5,218,481 A	6/1993	McBrath et al.	359/802
5,243,455 A	9/1993	Johnson et al.	349/18
5,345,262 A	9/1994	Yee et al.	

(75) Inventors: **Barry D. Silverstein**, Rochester, NY(73) Assn: **PROJECTION APPARATUS USING
TELECENTRIC OPTICS**

(*) Not

U.S.C. 154(b) by 0 days.

5,658,490 A	8/1997	Sharp et al.	252/299.01
5,719,695 A	2/1998	Heimbuch	
5,798,819 A	8/1998	Hutton et al.	
5,808,795 A	9/1998	Shinomura et al.	

(21) Appl. No.: **10/812,519**(22) Filed: **Mar. 30, 2004**(65) **Prior Publication Data**

US 2004/0084007 A1 Sep. 23, 2004

(Continued)

Primary Examiner—Christopher Mahoney(74) *Attorney, Agent, or Firm*—Nelson Adrian Blish**Related U.S. Application Data**

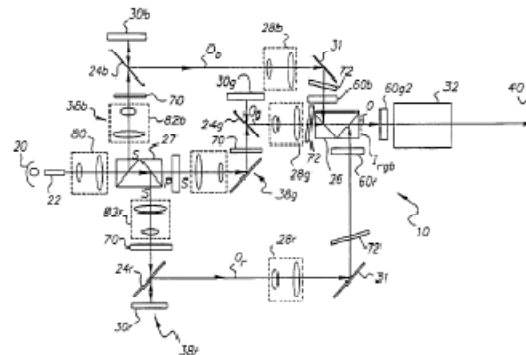
(63) Continuation-in-part of application No. 10/392,685, filed on Mar. 20, 2003, now Pat. No. 6,758,565.

(51) **Int. CL⁷** **G03B 21/14**(52) **U.S. CL** **353/20**(58) **Field of Search** **353/20; 349/9; 349/96; 359/500**(56) **References Cited****U.S. PATENT DOCUMENTS**

3,202,039 A	8/1965	DeLang et al.	348/265
4,428,028 A	1/1984	Gagson et al.	359/246
4,441,791 A	4/1984	Hornbeck	359/295
4,749,259 A	6/1988	Ledebuhr	
4,836,649 A	6/1989	Ledebuhr et al.	349/8
4,911,547 A	3/1990	Ledebuhr	
5,068,183 A	3/1992	Sonehara	

ABSTRACT

A digital projection apparatus (10) for projection of a multicolor image. A light source (20) provides visible light and a dichroic separator (27) splits the visible light into color light beams. Illumination optics directs each of the color light beams into a corresponding light modulation assembly (38). A magnifying relay lens (28) for each color light beam focuses and relays the modulated light to form a magnified real image of the reflective spatial light modulator (30). A dichroic combiner (26) forms a multicolor image by overlapping the magnified real images corresponding to each of the color light beams on a common optical axis. A projection lens projects the multicolor image toward a display surface. The polarization analyzers (72) are tilted relative to a local optical axis and are located in proximity to at least one of the magnified real images of the color light beams.

15 Claims, 14 Drawing Sheets

(12) **United
Dewald****PROJECTOR FOR DIGITAL CINEMA**

- (54) **PROJECTOR FOR DIGITAL CINEMA** 5,865,520 A * 2/1999 Kavanagh et al. 359,670
5,930,050 A * 7/1999 Dewald 348/66
(75) Inventor: Duane Scott Dewald, Dallas, TX (US) 5,978,051 A * 11/1999 Go hman et al. 362/282
6,048,080 A * 4/2000 Belliveau 353/31
(73) Assignee: Texas Instruments Incorporated, 6,120,152 A * 9/2000 Nakayama et al. 359/487
Dallas, TX (US) 6,149,276 A * 11/2000 Takeuchi et al. 359/247

(*) Notice: Subj. matter is not prior art under 35 U.S.C. § 102(b) by 0 days.

Texas Instruments Incorporated,

- (21) Appl. No.: 09/311,011 6,243,149 B1 * 6/2001 Swanson et al. 349/62
6,250,763 B1 6/2001 Fielding et al.
(22) Filed: May 13, 1999 6,278,801 B1 8/2001 Boon
6,364,492 B1 * 4/2002 Fujimori et al. 353/119
6,375,327 B2 * 4/2002 Holman et al. 353/20
6,394,607 B1 * 5/2002 Hashizume et al. 353/31
RE37,836 E * 9/2002 Fujimori et al. 353/119
(60) Provisional application No. 60/087,156, filed on May 29, 1998. 6,445,500 B1 * 9/2002 Itoh 359/487
6,486,997 B1 * 11/2002 Bruzzone et al. 359/247

Related U.S. Application Data

- (51) Int. Cl.⁷ H04N 5/64; G03B 21/14 * cited by examiner
(52) U.S. Cl. 348/744; 348/750; 348/756; 353/37
(58) Field of Search 348/750, 751, 348/756, 557, 766, 744, 770, 771, 781, 779; 353/37, 76, 77; 359/669, 839

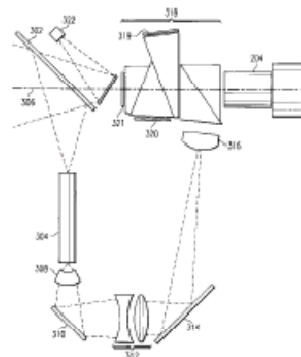
References Cited**U.S. PATENT DOCUMENTS**

- 3,589,804 A * 6/1971 Tallon et al. 352/140
3,719,419 A * 3/1973 Dyce 353/101
4,230,399 A * 10/1980 Mayne 396/554
4,668,077 A * 5/1987 Tanaka 355/30
4,922,336 A * 5/1990 Morton 348/51
5,424,868 A 6/1995 Fielding et al.
5,452,024 A 9/1995 Sampell
5,583,688 A 12/1996 Hornbeck
5,621,486 A * 4/1997 Doany et al. 348/756
5,638,142 A 6/1997 Kavanagh et al.
5,704,701 A 1/1998 Kavanagh et al.
5,786,934 A * 7/1998 Chiu et al. 359/494
5,800,033 A * 9/1998 Funamori et al. 353/97

Primary Examiner—John Miller
Assistant Examiner—Annan Q. Shang
(74) *Attorney, Agent, or Firm*—Charles A. Brill; Wade James Brady, III; Frederick J. Telecky, Jr.

ABSTRACT

A digital cinema projection system (200) for projecting images onto a display screen. The projection system (200) comprises a lamp console (102) and a projector (202). The projector (202) receives digital image data, processes the digital image data to create an image data stream that is compatible with the chosen spatial light modulator, and uses the processed image data to modulate a beam of light from the lamp console (102). A primary projection lens (204) and lens adapter mounted on a rotatable turret (206) focus the modulated light onto a display screen. Alternatively, an integrated anamorphic projection lens is used to eliminate the need for a separate lens adapter.

31 Claims, 6 Drawing Sheets



(10) **Patent No.:** US 7,339,714 B1
(45) **Date of Patent:** Mar. 4, 2008

5,061,049	A	10/1991	Hornbeck	359,224
5,078,479	A	1/1992	Vuilleumier	359,290
5,079,544	A	1/1992	DeMond et al.	340,701
5,083,857	A	1/1992	Hornbeck	359,291

5,083,857 A 1/1992 Hombeck 359/291

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2246559	1/1000
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(C)

OTHER PUBLICATIONS

D.M. Bloom, "The Grating Light Valve: revolutionizing display technology," www.siliconlight.com, 1998.

359/291; 359/290; 353/3

(57) ABSTRACT

A light processing system includes an array of optical signal

CLASS 359, OPTICAL: SYSTEMS AND ELEMENTS

CLASS 359, OPTICAL: SYSTEMS AND ELEMENTS

the processing devices include a plurality of at least partially reflective mirrors that are disposed outwardly from an inner conductive layer and are operable to receive at least some of the first signal part. In one particular embodiment, at least some of the mirrors are operable to undergo a partial rotation in response to the control signal. The partial rotation resulting in a reflection of the at least some of the first signal part in one direction.

20 Claims, 12 Drawing Sheets



The Patent Specification Need Not Disclose All Possible Embodiments

“We may take it that, as the statute requires, the specifications just detailed show a way of using the inventor's method and that he conceived that particular way described was the best one. **But he is not confined to that particular mode of use since the claims of the patent, not its specifications, measure the invention. . . . [I]t is not necessary to embrace in the claims or describe in the specifications all possible forms in which the claimed principle may be reduced to practice.**”

Smith v. Snow, 294 U.S. 1, 11 (1935).

The Grandparent Claims Are Not The '714 Claims

- Both patents have virtually the same specification.
- But they claim different aspects of the disclosed invention.
 - The grandparent claims specific parts and steps that comprise the embodiments.
 - The '714 claims cover the broader "concept" level system and method.